

# ECSz5050/NUM

nanoprecise stepper positioner for linear, vertical motion

## Technical Specifications

Technology	
travel mechanism	inertial piezo drive
Size and Dimensions	
footprint; height	50 x 50; 32 mm
max. installation space	50 x 50; 40,5 mm
weight	161 g
Materials	
positioner body	aluminum
actuator	PZT ceramics
bearings	stainless steel
connecting wires	insulated twisted pair, copper
positioner body (/RT)	aluminum
Options	
environmental options	/RT
material option	/AL
encoder options	---
Compatibility with Electronics	
open / closed loop controller	ECC100
Coarse Positioning Mode	
input voltage range	0 .. 100 V
typical actuator capacitance	0.6 $\mu$ F @ 300K
travel range (step mode)	8 mm
typical minimum step size	0.03 $\mu$ m
max. drive velocity (@ 300 K, no load)	2 mm/s
Fine Positioning Mode	
fine positioning range	0 .. 0.8 $\mu$ m
fine positioning resolution	sub-nm
input DC voltage range @ 300 K	0 .. 60 V
yaw angle (over 10 mm travel)	< 0.2 mrad
pitch angle (over 10 mm travel)	< 0.2 mrad
roll angle (over 10 mm travel)	< 0.2 mrad

Accuracy of Positioning (closed loop)	
encoder type	optoelectronic sensor
sensor power (when measuring)	/NUM: 300 mW
encoded travel range	entire travel
wavelength of illumination	870 nm
position resolution	1 nm
repeatability	50 nm
absolute accuracy	< 0.01% of travel range
Load @ Ambient Conditions (motion vertical)	
maximum vertical load	8 N (800 g)
maximum dynamic force along the axis	8 N
Mounting	
from the top	4 through holes dia 2.2 mm, cntrbr. f. M2
from the bottom	4 threads for M2.5 x 2 mm
load on top	12 threads M2 x 2.3 mm
Working Conditions	
mounting orientation	arbitrary
temperature range (/RT, /HV, /UHV)	0 ..100 °C
minimum pressure (/RT)	1E-4 mbar
Connectors and Feedthroughs	
cable	50 cm cable with connector
connector type, /RT, /LT Versions	14-pole connector
/RT version aluminum	1012096

